

Pilot Study: Ketamine Safety and Efficacy in General Practice for Unresponsive Chronic Pain
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Background

Recent analysis has shown that less than twenty-five per cent of patients’ serious pain is controlled by usual treatment¹. It is contended that the opioid crisis is, in part, fueled by this issue. With a 90 mg morphine limit on new patients, the need for alternative pain measures is especially acute².

Ketamine, a general anesthetic with NMDA receptor blocking properties, is useful in treating chronic pain and depression. IV infusion has been found helpful in cancer and CRPS pain. However, this approach often requires hospital care. One previous retrospective trial⁴ gave ketamine IV followed by oral ketamine over a 3 month period without complications. A previous trial³ found repeated intramuscular injections in the deltoid muscle could simulate IV infusion and help neuropathic pains and resistant headaches. This approach was piloted in this study in an office setting.

Objective

To determine safety and efficacy of repeated 5 - 10 mg Q15 minute injections of Ketamine in outpatients using protocol from a previous trial³.

Methods

Pain measured using a 0-10 VAS, neuropathic symptoms by a modified ID-4 scale. Depression measured with a Beck scale. Mood and QOL effects were measured on a 4 point Likert scale. Side effects of the injections were measured by prompted self report.

14 (75 % female, $M_{age} = 47.5$ $SD = 12.6$) with treatment resistant chronic pain were administered 5 -10 units of ketamine IM every 15 minutes for 2-3 doses.

54% received 2 doses; the rest, often a severely depressed subgroup, received 3.

Results

The most common medical diagnoses included widespread pain(4), neck pain(2), back pain/sciatic(2), and knee pain(1). 31% reported moderate to high neuropathic symptoms.

Average pain levels were high (7.0 /10 (range: 4-9)). The average score on the Beck depression scale was 24.58 (SD=11.8), 8 individuals (66.6%) showing moderate to severe depression.

Pain decreased an average of 2.8 (Range 2 – 5;(t= 12.19, $p < .01$). This pain decrease lasted for a median of three days (Range .1 to 4.4). These effects, unlike opioids, did not wane over time.

“Moderate” improvement in quality of life was noted ($M = 2.42$) and a “moderate” - "much" effect on mood lasting 3 days ($M = 2.75$).

Some came 1 - 2 times a week after the study while others came in sporadically. Some have been having shots for up to 5 years, while some no longer required them regularly or at all. Many felt their pain was more manageable and found pain was no longer spiralling them out of control. The Present trial often used approximately 0.3 – 0.4 mg/kg (\$7.00/session – absorbed into office visit); oral doses in above quoted study ⁴ were 1.5 - 3.0 mg/kg (therefore 5-10 times that cost and not covered by health plans).

Side Effects

- Temporary inebriation or unsteadiness for on average 1/2 hour. Patients stated inebriation disappeared with regular use.
- One subject reported difficulties with working memory for a few hours.
- First-time patients have often not slept much for days and will find that they will go home and undergo hours of sleep after first use.

References

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- One subject reported nausea
- No cases of depersonalization syndrome or bladder issues were seen.
- One patient with bipolar disorder who safely took ketamine shots for one year developed an enclosed delusion when started on amitriptyline – later this was found, in isolation, to cause hallucinations as well – The patient was taken off both drugs although ketamine was not directly implicated.

CASE STUDY:

Participant is a middle-aged woman with mild concussion, chronic pain for 5 years, and severe neck injury with initial c6/7 right facet instability. Subsequently had symptoms of positional cervical myelopathy at night with numbness of face and numbness/pain right leg and arm, though static MRI normal. Headaches were often of cervical origin, and she was getting occipital neuralgia jabs on right side as well. Topirimate and carbamazepine were helpful. Though opioids aggravated the headaches and had to be avoided, marijuana was helpful. As her pain and headaches were spiralling out of control, she was making regular emergency visits. She also had major mood issues and was therefore hospitalized for three days. She moved from a rural setting to receive ketamine and occipital nerve blocks, which made a major difference. The combination of antidepressants and ketamine was helpful for her depression.

Now, she rarely requires emergency visits and is much more stable. She receives ketamine injections 7.5 mg x 2 once or twice weekly. Prolotherapy to neck has reduced myelopathy symptoms. She uses a comfortrak cervical traction. She is taking pain education available in our community. She is in much less pain, happier and much more stable.

Conclusion

Repeated small dose ketamine shots can be helpful in resistant pain cases. Given the lack of readily available alternatives, this is worth investigating further. A recent analysis ⁵ found ketamine usage was associated with less depression, less pain and fewer opioid side effects. Improved quality of life was evident here as well.